Remarks/Arguments

Reconsideration and allowance of this application are respectfully requested.

The Office Action restricts out newly submitted claims 14-19. With this amendment, these claims have been canceled.

Claims 1, 3-5 and 7-13 of this application are provisionally rejected on the ground of non-statutory obviousness-type double patenting over claims 1-10 of application number 11/565,771 ('771 Application). The '771 Application has not yet been allowed. Applicant will address this issue if the '771 Application is allowed prior to this application.

Claims 1, 5 and 9 stand rejected as anticipated by Darrow (USP 4,996,114). The claims have been amended to obviate this rejection.

Specifically, claims 1, 5 and 10 have been amended to recite that titanium carbide particles are "densely" bonded "only" to the surface of the Ni alloy layer. Support for the dense bonding of the particles can be found in this application at page 4, line 35. Support is also found in this application at page 5, lines 22-25. That the titanium carbide particles are bonded "only" to the surface of the Ni alloy layer is supported in this application in Figures 1, 2, 3(b) and 5 which show titanium carbide particles only on the surface of the Ni alloy layer. Support can also be found at page 6, lines 8-17 which state:

> By the heating, the TiC particles are bonded to the Ni alloy layer in such a state that they protrude from the surface of the Ni alloy layer, as shown in FIG. 3(b). In this connection, it is undesirable if the TiC particles become entirely covered with the melting Ni alloy in the heating process. In order not to entirely cover the TiC particles with Ni alloy but to strongly bond the TiC particles to the Ni alloy layers with the particles partly exposed on the surface of the Ni alloy layer, the average particle diameter of the TiC particles is preferably made 10 to 500 μm.

If the TiC particles are not entirely covered with the melting Ni alloy, then the TiC particles are only at the surface of the Ni alloy.

Darrow teaches an abrasion-resistant coating including nickel or cobalt mixed with abrasion-resistant tungsten carbide or titanium carbide grit particles. As explained at column 2, lines 15-21, the coating is applied to a substrate by flame spraying a spray-weldable, self-fluxing metal powder onto a substrate using a plasma or acetylene flame spray gun. The powder typically consists of a nickel or cobalt based metal, fluxing element, and carbide grit particles. By flame spraying such a powder, the carbide grit particles are distributed evenly throughout the nickel or cobalt based metal. Because the carbide grit particles are distributed throughout the base metal, the particles are not "densely" bonded at the surface of the base metal. Furthermore, the grit particles are not bonded "only" to the surface of the base metal. Thus, the grit/base metal coating of Darrow will not repel molten material as effectively as the TiC particles as recited in the claims of this application.

Therefore, claims 1, 5 and 9 are not anticipated by Darrow.

Claims 10 and 12 stand rejected as obvious over Darrow. It is respectfully suggested that the claims have been amended to obviate this rejection.

As noted above, claim 10 has been amended to recite that the titanium carbide particles are densely bonded only to a surface of the nickel alloy. Darrow neither teaches nor suggests the desirability of this feature. Furthermore, claim 10 requires that the titanium carbide particles be applied to the body by burying the body in TiC power. Nowhere in Darrow is there any suggestion of applying grit particles to a surface by burying the surface in the grit particles. Instead, as explained above, the coating including both the grit particles and the base metal are

flame sprayed onto a substrate. This procedure will not result in the grit particles being densely bonded only to surface of the base metal. The Office Action fails to set forth any reason why those skilled in the art would modify Darrow to achieve titanium carbide particles densely bonded only to a surface of a nickel alloy layer by burying the body including the nickel alloy layer in titanium carbide powder. Therefore, claims 10 and 12 are not rendered obvious by Darrow.

Claim 1, 3, 5, 7 and 9-12 stand rejected as obvious over Nakayama et al. in view of Negishi. It is respectfully suggested that this rejection is in error.

Nakayama teaches a nickel alloy layer plated on a steel base. Carbide particles are provided in the nickel alloy layer. Although paragraphs 10 and 28 of the translation of Nakayama suggest that the concentration of carbide particles can increase near the surface of the nickel alloy layer, it is clear that the carbide particles are distributed throughout the nickel alloy layer. Therefore, Nakayama does not teach titanium carbide densely bonded in a particulate state only to a surface of a nickel alloy layer as required by claims 1, 3, 5, 7, and 9-12. Furthermore, nowhere in Nakayama is there any suggestion of creating such titanium carbide particles by burying a body having a nickel alloy layer in titanium carbide powder. For this reason also, claim 10 is patentable over Nakayama.

Negishi does not compensate for the shortcomings of Nakayama. Negishi relates to a die for a casting machine in which a ceramic film is coated on a surface in contact with molten metal. Nowhere in this reference is there any suggestion that titanium carbide should be densely bonded in a particulate state only to a surface of a nickel alloy layer. Instead, this document teaches the use of PVD or CVD to form a membrane of titanium carbide. Furthermore, nowhere

in this document is there any suggestion that titanium carbide particles densely embedded only in the surface of a nickel layer would repel molten aluminum alloy.

For these reasons, claims 1, 3, 5, 7 and 9-12 are patentable over the combination of Nakayama et al. and Negishi.

Claims 4, 8 and 13 stand rejected as obvious over Nakayama et al. in view of Negishi and further in view of Honma. It is respectfully suggested that this rejection is in error.

Claims 4, 8 and 13 are dependent upon claims 1, 5 and 10, respectively. Thus, claims 4, 8 and 13 are patentable over Nakayama and Negishi for the reasons set forth above.

Honma does not compensate for the deficiencies of Nakayama and Negishi. Honma relates to a corrosion and abrasion resistant nickel alloy. The document describes a Ni-B-Si-Mo alloy. Also, carbon is included as an additive. No suggestion exists in this document that titanium carbide should be densely bonded in a particulate state only to a surface of a nickel alloy, or that such particles would repel molten aluminum alloy.

Therefore, claims 4, 8 and 13 are patentable over the combination of Nakayama, Negishi and Honma.

In view of the above, this application is believed to be in condition for allowance, and such a Notice is respectfully solicited.

Please charge any shortage in the fees or credit any overpayment to Deposit Account No. 50-3266.

Respectfully submitted,

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